Daily GLOWBUGS

Digest: V1 #66

via AB4EL Web Digests @ SunSITE

Purpose: building and operating vacuum tube-based QRP rigs

[AB4EL Ham Radio Homepage @ SunSITE]

%%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%%

Subject: glowbugs V1 #66
glowbugs Saturday, June 28 1997 Volume 01 : Number 066

Date: Fri, 27 Jun 1997 20:47:36 +0000
From: Sandy W5TVW <ebjr@worldnet.att.net>
Subject: RER: SX-71 oscillation!

OK gang, I FINALLY found the cause of my intermittant RF stage/mixer oscillation problem with the SX-71. This one drove me nuts! I soldered/ resoldered ground lugs to the chassis in the RF box. Also the grounds on the tuning gang that went to the riveted lugs. Everything I did seemed to make the problem get worse!

The cure? I should have known ahead of time! The spring brass shim grounding strips between the capacitor gang sections that are grounded to the tuning capacitor shield partitions were making very poor contact. They LOOKED OK and I lubed them up with de-ox-it. I had to defeat the "staking" with a hammer
and a 1/8" pin punch, them remove the brass contacts. Cleaned them up, rebent them to make good contact with the gang shields and PRESTO! No more problemo! I shoulda known!!! Hallicrafters tuning gangs are notorious for bad grounding contact problems, but usually once you get them cleaned up with de-ox-it the problems disappear.

Watch out for this. No matter how many years I have fooling with this gear,
as a hobby and as an every day job, this stuff is always throwing NEW curve balls to you! I hope this saves someone else from this kinda grief. Old dogs can learn new tricks, I guess.

73,
E. V. Sandy Blaize, W5TVW
"Boat Anchors collected, restored, repaired, traded and used!"
417 Ridgewood Drive,
Metairie, LA., 70001
ebjr@worldnet.att.net
Looking for: 860 tubes, WL-460 tubes
Butternut HF2V antenna, G-R test gear.....*

Date: Fri, 27 Jun 1997 23:02:20 -0700 (PDT)
From: Ken Gordon <keng@uidaho.edu>
Subject: 1L6 substitutes...(long)

I inadvertantly mentioned here the other day that I had substituted another tube for the 1L6 in my R-1004 and the said substitution had made a great difference in the performance of the two receivers I was working on.

This substitution was suggested to me by Bob Rolfness, W7VZX, which he had learned from an article he had found on the internet.

The tube(s) are either the 1AC6/DK92 or the 1AB6/DK96 pentagrid converters. They are available for considerably less money than the 1L6.

The reason I said "inadvertantly" above is that I have not yet finished a thorough test of how the tube operates in a circuit originally designed for the 1L6 and did not really want to get users' of the 1L6 hopes up without reason.

Before I plugged the 1AC6 into the socket, I compared the base diagrams of both tubes. The only important difference was that (essentially) pins 5 and 6 were reversed.

My first inclination was to swap the connections to pins 5 and 6, but upon a suggestion from Bob, I just plugged the 1AC6 in his receiver and let 'er rip. Although the receiver DID work, it oscillated fiercely on any frequency higher than the bottom 1/3 of any tuning range. I.e., it worked fine on 40 meters but broke into oscillation at 8 mHz. and above.

After talking with Bob, we decided that a) swapping the wiring to pins 5 and 6 was completely reversible, and b) neither of us ever intend to use a 1L6 again. So I swapped the connections on his receiver and aligned it.

Although oscillator alignment on bands 1 and 2 (3 to 6, and 6 to 12 mHz) was fairly easily accomplished, band 3 was not. The oscillator padder cap could not be adjusted so that the upper band edge (24 mHz) could be brought into alignment. The cap was adjusted to minimum capacitance but needed to go lower yet. So I did the best I could with it and left it there.

This simple mod made a MAJOR difference in how the receiver operates! The oscillator no longer pulls off frequency when I key the transmitter, the overall noise level is MUCH lower, and the sensitivity is MUCH greater, although it still drops as the operator tunes higher in frequency. The evening I finished this mod, I worked K7EW on 40. He was running one watt to a dipole and I couldn't even HEAR him on the SB-301 which was connected to the same antenna as the GRC-109.

To do the alignment, I used a simple Beckman signal generator, a Heath frequency counter, and a Heath scope. Until I get the URM-25D set up I cannot give you a true value for receiver sensitivity and/or signal-to-noise ratio.

As soon as I am able to do some more experimentation and testing, I will post the results here. This information should be of interest to Zenith TransOceanic owners also.

1AC6s are fairly easily available in Europe where they were made by the millions and its filament voltage/current requirements are identical to the 1L6's.

After this project, and the 15 watt 12AX7 push-pull class B transmitter project is finished, I intend to dig into the SB-301 to see why it is not up to par.

BTW, anyone have a schematic diagram for a push-pull single tube oscillator transmitter, crystal or otherwise?

Ken W7EKB

Date: Sat, 28 Jun 1997 09:04:53 -0400
From: Ray LaRue <raylarue@gte.net>
Subject: Re: 1L6 substitutes...(long)

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>
> Ken W7EKB

Ken,
There is a short section on push-pull oscillators in "Practical Radio Communications", Arthur R. Nilson, McGraw Hill, c1935, p150.
73,
Ray, W4BYG

Date: Sat, 28 Jun 1997 10:46:35 -0400
From: "Brian Carling" <bry@mnsinc.com>
Subject: Re: T20 Substitute

On 25 Jun 97 at 10:48, EWoodman@aol.com wrote:

> I have a transmitter circuit that uses a 6L6 oscillator driving a T20 final
> at about 50 watts input. The description says an 801A or similar will sub for
> the T20. I don't happen to have data on the T20 or 801A. Can anyone give me
> the basic data on it or maybe any other tubes that would be similar?

Eric - an 809 might do -that was a popular final back then.
Heavier power level than the 807 but I think you could drive it with
the 6L6

That's IF you can find one!

I got a couple of 828 pentodes the other day at ahamfest. They look
promising for a QRO final!
****
*** 73 from Radio AF4K/G3XLQ Gaithersburg, MD USA *

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**  E-mail to:  bry@mnsinc.com                    *
*** See the interesting ham radio resources at:    *
**  http://www.mnsinc.com/bry/                    *
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Date: Sat, 28 Jun 1997 17:15:33 -0600 (MDT)
From: Art Winterbauer <art@comet.ucar.edu>
Subject: John Ruskin Special...problem

In the March 1990 issue of CQ magazine (p. 76) Dave Ingram wrote up the John Ruskin Special, a 6L6 transmitter. Having wired it up as shown (I think), there is zilch output.

I'm not sure why there is shown a tap from the heater filament on pin 2 going off to the ground side of the HV supply (and hence to the key). If anyone has that article, could they check this out to see if that connection dot on the schematic is in the wrong place--that instead of showing a connection to the negative high-voltage DC supply, the dot should be moved up to the .01uF paper capacitor?

If the schematic makes sense to everyone, then I'll start troubleshooting my connections, whether the 6L6 metal tube I'm using is good, etc. I've been stung before on an incorrectly printed schematic in CQ before and don't want to chase me tail.

Thanks! & 73 de Art, WA5OES

End of glowbugs V1 #66
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